Guidelines for Biological Studies

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1.0 Introduction

1.1 Overview of Regional Conservation Planning

The City of Carlsbad is participating in regional conservation efforts through implementation of the Carlsbad Habitat Management Plan (HMP), which serves as Carlsbad's subarea plan under the Multiple Habitat Conservation Program (MHCP). The MHCP is a comprehensive, multiple jurisdiction planning program designed to develop an ecosystem preserve in northwestern San Diego County. This preserve system is intended to protect viable populations of key sensitive plant and animal species, their habitats, and ecosystem function while accommodating continued economic growth. Each jurisdiction within the MHCP area will implement the program through their respective subarea plans, which describe specific implementing mechanisms.

1.2 Purpose of the Guidelines for Biological Studies

The Guidelines for Biological Studies were developed to provide the biological standard for processing HMP permits and to help the user navigate through the HMP regulations. Specifically, this document should provide guidance to (1) consulting biologists on how to prepare a Biological Resources Technical Report (BTR) and demonstrate compliance with the HMP, MHCP, and CEQA; (2) City planners on the critical components of a project's BTR and/or Environmental Assessment during the project review process; and (3) Wildlife Agencies and the California Coastal Commission on biological reporting standards for environmental review. Following these guidelines will ensure that an adequate environmental impact analysis is conducted using the appropriate biological data, and that HMP-compliant mitigation is incorporated into project design and permit conditions.

1.3 How to Use these Guidelines

It is important to note that these guidelines were not developed to be a stand-alone document to replace the HMP or related environmental regulations. The purpose of this document is to provide a summary of pertinent regulations which have been distilled into a more concise format so that the user can understand the larger context of environmental protections within the City of Carlsbad. The user should always refer directly to the regulations referenced in the guidelines to fully understand them. These guidelines may be used in several different ways, including:

- General reference. By reading the guidelines section by section, the reader will gain an overview of the HMP compliance process.
- Index. The guidelines may be used as an index to the standards and conditions that are detailed in the MHCP and HMP. Each topic summarized in the guidelines includes a reference to the appropriate document and page number that contains the original regulations and policies.
- Compliance checklist. The HMP Compliance Checklist (Section 4) can be used as a tool to help the user determine which regulations and mitigation requirements are relevant to a particular project.
- Template. Biological consultants should use the BTR Format as a template for project-specific biological resources surveys. The sections on evaluating baseline conditions, impact analysis, and impact mitigation should be consulted as well, to ensure report completeness.
- Resource for project conditions. The Standard Impact Mitigation Measures (Appendix A) can be used by planners to determine the appropriate mitigation measures to be used for conditions of project approval within the HMP planning area. These mitigation measures were developed from the MHCP, HMP, and Agency comment letters for past projects to ensure that potential impacts to native habitat and species are mitigated pursuant to the HMP.

1.4 Guideline Organization

These guidelines are organized as follows. Section 2.0 consists of definitions that are relevant to project compliance review and a list of acronyms that are used throughout the document. Section 3.0 provides an overview of the project review process. Section 4.0 includes a compliance checklist. Section 5.0 includes a list of laws, policies, and ordinances that affect development in the City of Carlsbad, and an overview of MHCP/HMP regulations. Section 6.0 discusses the evaluation of baseline conditions to determine the presence of sensitive biological resources. Section 7.0 describes the process for analyzing potential project impacts. Section 8.0 summarizes the requirements for mitigating impacts to sensitive species and habitats pursuant to the HMP. Section 9.0 provides a standard formats for a Biological Resources Technical Report (BTR), and includes key elements for each section. Section 10 includes a summary of permitting that may be required for projects. Appendix A, Standard Impact Mitigation Measures, is included for reference.

2.0 Definitions, Acronyms and Abbreviations

2.1 Definitions

Buffer – An undisturbed strip of natural habitat surrounding an area in need of protection (e.g., riparian habitat, or bird nest) from negative impacts.

Coastal Zone – Areas within the City of Carlsbad that are subject to the City's adopted Local Coastal Program.

Conservation Easement – A legally binding restriction placed on a piece of property to protect its associated resources. A conservation easement limits certain types of uses or prevents development from taking place on land in perpetuity while the land remains in private hands. Conservation Easements are defined in California Civil Code Section 815.1.

Core Areas – Areas within the Focused Planning Area that consist of blocks of habitat that are sufficiently large to reliably support breeding populations of species, or that are large and intact enough to form ecologically functional areas for preserve design.

Covered species – A species for which incidental take has been authorized under the terms and conditions of the Habitat Management Plan (HMP) and Implementing Agreement (IA).

Clearing and grubbing – Removal of any and all types of vegetation, roots, stumps or other plant material, or the clearing or breaking-up of the surface of the land by digging or other means.

Focused Planning Area – Lands within the Multiple Habitat Conservation Plan (MHCP) area that are designated as having a high biological value and that are the highest priority for conservation. Focused planning areas consist of HMP cores, linkage areas, and special resources areas.

Fully Protected Species – Species of wildlife that are listed as Fully Protected by the State Legislature (see Fish and Game Code, Sections 3511, 4700, 5050, and 5515). Fully protected species may not be taken or possessed at any time.

Grading – Any excavation, fill, clearing and grubbing of vegetation or any combination thereof.

Habitat Conservation Plan (HCP) – Pursuant to Section 10 of the federal Endangered Species Act, an HCP allows the U.S. Fish and Wildlife Service to permit "taking" of endangered or threatened species incidental to otherwise lawful activities, when the taking is mitigated by conservation measures.

Habitat creation – Habitat creation occurs on bare earth, whereas habitat restoration and habitat enhancement occur when a site already is occupied by habitat that requires improvement. This term is often applied for projects that are conducted as mitigation on terrain that is entirely devoid of vegetation, and is a requirement for wetlands mitigation to avoid the federal policy of no-net loss of all U.S. wetlands.

Habitat enhancement – As defined by the Society for Ecological Restoration, habitat enhancement or reclamation involves the reparation of ecosystem processes, productivity and services, whereas the goals of restoration also include the re-establishment of the pre-existing biotic integrity in terms of species composition and community structure. Habitat enhancement improves disturbed or degraded habitats without changing the ecological community; for example, through exotic species removal.

Habitat in-lieu mitigation fee (also called HMP mitigation fee) – a per-acre fee charged for impacts to Habitat Groups D, E, and F (See HMP Table 11) as an alternative to conserving habitat onsite or acquiring habitat offsite to mitigate for such impacts.

Habitat restoration – In this document, habitat restoration is synonymous with ecological restoration. "*Ecological restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed*" (Society for Ecological Restoration).

Hardline preserve – Areas which have been conserved in perpetuity for their value to biological resources through open space zoning or conservation easements.

Incidental take – The taking of a federally listed wildlife species, if such taking is incidental to and not the purpose of carrying out otherwise lawful activities.

Jurisdictional wetlands and waters – Wetlands and riparian habitat that are subject to federal and state jurisdiction pursuant to the federal Clean Water Act and the California Fish and Game Code.

Linkage – A component of the preserve system established under the HMP, consisting of conserved habitat that provides connectivity between Core Areas and to natural communities within the region.

Listed species – A species that has been designated as rare, threatened, or endangered by state or federal wildlife agencies.

Local Facilities Management Zones – The City of Carlsbad has been divided into 25 Local Facilities Management Zones under the Growth Management Program to facilitate planning and conservation within the City (HMP Figure 1).

Mitigation – Measures undertaken to diminish or compensate for the negative impacts of a project or activity on the environment, including: (a) avoiding the impact altogether; (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or (e) compensating for the impact by replacing or providing substitute resources or environments.

Mitigation bank – A mitigation or conservation bank "is a parcel of land containing natural resource values that are conserved and managed in perpetuity, through a conservation easement held by an entity responsible for enforcing the terms of the easement, for specified listed species and used to offset impacts occurring elsewhere to the same resource values on non-bank lands" (U.S. Fish and Wildlife Service). Mitigation banks function similarly to financial banks in that they sell habitat credits to project proponents whose projects will impact natural resources. The money received for these credits are used to protect and enhance the resources of the mitigation bank. Mitigation banking requires formal mitigation banking agreements set forth by the U.S. Fish and Wildlife Service (through a standard banking enabling instrument) or by the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency (through Section 404 of the Federal Clean Water Act), in which the California Department of Fish and Game also participates through Fish and Game Code Section 1851. These agreements require the

protection and restoration of habitats in perpetuity through the establishment of conservation easements, and hold the bank owner liable for the successful maintenance of the natural resources the bank intends to conserve.

Narrow endemic species – Native species with restricted geographic distributions, soil affinities and/or habitats, and for purposes of the HMP, species that in addition have important populations or their habitat is within the plan area, such that substantial loss of these populations or habitat within the HMP area might jeopardize the continued existence or recovery of that species.

Property Analysis Record (PAR) – A computerized database methodology used to calculate the costs associated with the management, maintenance, and monitoring of natural habitat areas in perpetuity.

Revegetation – the process of replanting vegetation that previously existed at a site. Revegetation can increase the area of suitable habitat in the landscape, improve the quality of existing habitat and help to link remnant or isolated habitats by providing 'stepping stones' and corridors.

Riparian habitat – An ecosystem in proximity to a consistent source of water (e.g., a river, stream, or shoreline) composed of native riparian vegetation that provides habitat for wildlife.

Sensitive biological resources – Habitats and species that are legally protected by state and federal law or that are otherwise considered sensitive by federal, state, or local resource conservation agencies and organizations.

Setback – An ecological buffer zone to protect features of a natural community. The purpose of a setback is to separate conserved land from other land uses so that conflicts and impacts are minimized.

Special Requirements – Requirements that pertain to potential impacts to certain species (e.g., narrow endemics), or impacts that are within the Coastal Zone adjacent to a Hardline Preserve.

Special Resource Area – Areas within the preserve, but outside of core and linkage areas, that are defined as vernal pools, significant populations of listed or endemic plant species, or movement corridors for large mammals.

Standards Area – Lands which must be designed, permitted and developed in accordance with the standards stated in Section D of the HMP. Prior to the approval of the HMP, these properties were identified as important to the preservation of the diversity of natural communities in the HMP area, but hardline area boundaries had not yet been submitted.

Upland Habitat – Terrain that is not affected by the water table or surface water, or else affected only for short periods so that riparian (hydrophilic) vegetation or aquatic processes do not persist.

Urban/wildlands interface – Where a natural, undeveloped community is located adjacent to a developed or disturbed area.

Vegetation communities – an association of plants, each occupying a certain position or ecological niche, inhabiting a common environment, and interacting with one another. Dominant plants usually define the community, e.g., a grassland community.

Wetlands – Areas that are periodically or permanently inundated by surface or ground water and support vegetation adapted for life in saturated soil. Wetlands are regulated by the Army Corps of Engineers (Corps), the California Coastal Commission, and the California Department of Fish and Game (CDFG), and are further defined by each jurisdiction:

a) Corps (Clean Water Act) – Wetlands that have *all three* of these wetland indicators: hydrophytic vegetation, hydric soil, and the presence of ground or surface water, as described in the 1987 Corps Wetlands Delineation Manual.

b) CCC (California Coastal Act) – Wetlands within the coastal zone.

c) CDFG (Fish and Game Code 1600-1616) – Wetlands that have *one* or more of the three wetlands indicators above.

Wildlife Agencies – U.S. Fish and Wildlife Service, and the California Department of Fish and Game.

2.2 Acronyms and Abbreviations

CCC – California Coastal Commission
CDFG – California Department of Fish and Game
CEQA – California Environmental Quality Act
CESA – California Endangered Species Act
City – City of Carlsbad
Corps – Army Corps of Engineers
CNDDB – California Natural Diversity Database
CWA – Federal Clean Water Act
EA – Environmental Assessment
EIR – Environmental Impact Report
EIS – Environmental Impact Statement
FESA – Federal Endangered Species Act
FPA – Focus Planning Area
GIS – Geographic Information System
HCP – Habitat Conservation Plan
HMP – City of Carlsbad Habitat Management Plan
IA – Implementing Agreement
LCP – Local Coastal Zone Program
LFMZ – Local Facilities Management Zone
MHCP – Multiple Habitat Conservation Program
MND – Mitigated Negative Declaration
NCCP – Natural Communities Conservation Program
ND – Negative Declaration
OSMP – Carlsbad Open Space Management Plan
PAR – Property Analysis Record
RWQCB – Regional Water Quality Control Board
SDNHM – San Diego Natural History Museum
SRA – Special Resource Area
USFWS – U.S. Fish and Wildlife Service
Wildlife Agencies (Agencies) – the CDFG and the USFWS

3.0 City Review Process

3.1 General Overview

To put these guidelines into context, it is helpful to understand the development project review process and details of the HMP compliance component (Figure 1), which can be summarized as follows:

Project Design and Submittal. During the project design phase, the applicant should consult the HMP and the Guidelines for Biological Studies to ensure compliance with HMP regulations. The applicant submits a complete application that includes all necessary environmental documentation including an Initial Study (IS) pursuant to CEQA, and a BTR. The BTR is a critical document that describes the biological resources on site, potential project impacts, and recommended mitigation. The Guidelines for Biological Studies contain minimum standards for BTR content and format to clearly demonstrate HMP (and CEQA) compliance.

Project Review. The project is reviewed by the City Planning Department. HMP Compliance is determined by comparing the BTR and project materials (e.g., grading and landscape plans, other technical reports, etc.) to the HMP requirements. At this stage, the wildlife agencies (Agencies) can be involved at various levels for different projects, either through informal discussions or for project design Standards Area compliance consultation; projects may be simply reviewed by the Agencies for a confirmation of compliance. Projects in a Standards Area require consultation with Agencies after City review and before HMP compliance is determined (i.e., Consistency Findings). Projects that change the Hardline Preserve require official Agency approval prior to HMP compliance determination (i.e., Equivalency Findings).

Environmental Review. The next step consists of an environmental review by the Wildlife Agencies to determine compliance with CEQA and HMP, which are analyzed concurrently. The Environmental Assessment (EA) Part II and BTR are sent to the Agencies (and to the Coastal Commission if the project is within the Coastal Zone) and made available for a 30-day (for ND and MND) or 45-day (for EIR/EIS) public review. If the Agencies, Coastal Commission, or public have concerns about HMP compliance, they can comment on the environmental documents, and staff will respond accordingly. If the project is found to be in non-compliance, it can be redesigned, the impacts reanalyzed, the mitigation plan revised, and the project resubmitted. As mentioned above, projects in

a Standards Area require consultation with Agencies (i.e. Consistency Findings). Projects that change the Hardline Preserve require official Agency approval prior to HMP compliance determination (i.e. Equivalency Findings).

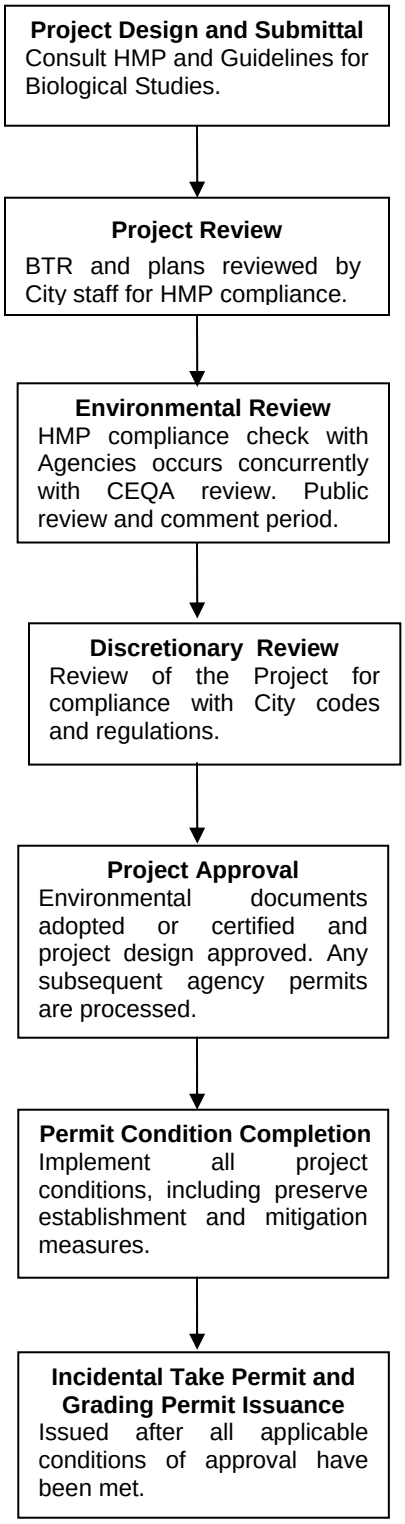
Discretionary Review. CEQA documents are processed concurrently with discretionary project review. The CEQA public review process precedes any public hearing or determination on the project. The CEQA document (Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report) is taken to the decision makers with all other discretionary actions.

Project Approval. Once the project is found to be compliant with CEQA and the HMP, as well as other applicable codes and regulations, the environmental documents are adopted or certified and the project design is approved. The City has authority to issue take permits for covered species and to authorize impacts to their habitats (see below). However, any permits or certifications required by the Army Corps of Engineers (Corps), Regional Water Quality Control Board (RWQCB), California Department of Fish and Game (CDFG), California Coastal Commission (CCC), or other agencies are processed directly with those agencies concurrent with or subsequent to City discretionary review. Coordination with all permitting agencies greatly facilitates the process and is strongly encouraged.

Permit Condition Completion. All relevant project conditions must be met prior to issuance of grading or building permits, including preserve establishment and implementation of mitigation measures. For projects that are establishing a preserve, this phase of processing involves the preparation of a Preserve Management Plan, funding of an endowment, recordation of a Conservation Easement (as defined in California Civil Code Section 815.1), and the securing of a Preserve Manager.

Incidental Take Permit and Grading Permit Issuance. After all applicable conditions have been met, the City will issue an incidental take permit (if required) and a grading permit.

Figure 1. Project Review Process



4.0 HMP Compliance Checklist

To assess a project for compliance with the HMP, it is necessary to understand the current biological conditions on the project site, and potential impacts to biological resources. Once this is done, it will be possible to determine which HMP regulations are relevant to the project. Generally, there are three characteristics that must be assessed to determine pertinent HMP regulations: project location, habitats on site, and species that occur or potentially occur onsite. The last step is to identify the habitat impact mitigation ratio that is required by the HMP, and the mitigation measures that would be required to ensure HMP (and CEQA) compliance. Once these steps have been taken, the project can be reviewed for HMP compliance. Check off the appropriate boxes as described below, and review the Guidelines that are referenced for each item checked.

A. Review the existing conditions of the project site. Using the most current information presented in the BTR, determine which habitats and species exist or potentially occur onsite, and check off the appropriate boxes in Section A, Existing Conditions.

B. Identify the HMP requirements that are relevant to the project, and check off the appropriate boxes for project location, special requirements, and general HMP compliance in Section B, HMP Regulations. Refer to the guidelines references for each box checked, and keep the following in mind:

Project Location. Projects will be within one of four locations: (1) within a Hardline Area, (2) within a Standards Area, (3) outside of the preserve, or (4) within an area exempt from the HMP (e.g., areas covered by an existing HCP are labeled "Not a Part" in HMP Figure 28). It is also important to determine if a project is inside or outside of the Coastal Zone.

General HMP Compliance. General HMP compliance regulations apply to all projects, but will be superseded by more restrictive special requirements. Habitat-specific mitigation ratios apply. Species-specific requirements will apply if the project is expected to impact covered species, narrow endemic species, listed species, or no-take species. Other requirements deal with fuel management and grading.

Special Requirements. If a project is adjacent to a Hardline Area or within the Coastal Zone, then special requirements will apply to the project.

C. Review impact analysis provided in BTR to determine if (a) potential impacts were adequately analyzed, and (b) sufficient background documentation is available. Check off items in Section C, Impact Analysis. Request additional information or documentation from the applicant if necessary.

D. Review mitigation requirements based on the results of the impact analysis. Refer to the guidelines cited for each checked box, and ensure that the appropriate mitigation is incorporated into the project. Check off available supplemental project documentation. Request additional documentation from the applicant if necessary.

E. Review project application for appropriate environmental documentation. In Section E, Environmental Documentation, check off each type of survey that was conducted and check off components of the BTR to ensure that all critical elements have been completed. Request any missing documentation from the applicant.

F. Ensure processing of HMP amendments and permits. If required, major or minor amendments must be processed prior to the approval of the HMP permit.

A. Existing Conditions

1. Sensitive Habitats Onsite (Section 5.3.1, see D. below)

Wetlands and/or Riparian Habitats:

- ❒ Riparian scrub (southern willow scrub, mulefat scrub, baccharis/tamarisk scrub)
- ❒ Riparian woodland (sycamore-alder woodland)
- ❒ Riparian forest (coast live oak riparian forest) *****
- ❒ Southern coastal salt marsh
- ❒ Freshwater marsh
- ❒ Estuary *****
- ❒ Cismontane alkali marsh
- ❒ Fresh/open water
- ❒ Vernal pools*****
- ❒ Disturbed wetlands

***** Sensitive habitats that may have special requirements

Upland Habitats

- ❒ Native grassland
- ❒ Non-native grassland
- ❒ Coastal sage scrub*****
- ❒ Maritime succulent scrub*****
- ❒ Coastal sage scrub/chaparral scrub
- ❒ Southern mixed or chamise chaparral
- ❒ Southern maritime chaparral*****
- ❒ Oak woodland*****
- ❒ Eucalyptus woodland

***** Sensitive habitats that may have special requirements

2. Sensitive Species Onsite (Sec. 5.3.2; see D. below)

- ❒ HMP covered species
- ❒ Narrow endemic species
- ❒ Estuarine species
- ❒ State or federally listed species (rare, threatened, or endangered)
- ❒ No-take species (fully protected and other)
- ❒ Non-covered listed and non-listed sensitive species
- ❒ Raptors or migratory birds

B. HMP Regulations

1. Project Location

- ❒ Inside Hardline Preserve Area (Sec. 5.2.1)
- ❒ Within Standards Area, LFMZ_____ (Sec. 5.2.2)
- ❒ Outside the preserve (i.e., not in Standards or Hardline Areas) (Sec. 5.2.3)

- ❒ Within an area exempt from the HMP (Sec. 5.2.4)
  __Within an area covered by pre-HMP take agreement
  __Within an area labeled as "Not a Part" in HMP Figure 28
- ❒ Inside of the Coastal Zone (Special Requirements, Sec. 5.4.2)

2. General HMP Compliance

- ❒ *Habitat-specific requirements* (Sec. 5.3.1; see A.1 above for a list of habitat types onsite and note that habitats with an asterisk may have special requirements; see habitat-specific regulations for Standards Areas and Coastal Zone if relevant)
- ❒ *Species-specific requirements* (Sec. 5.3.2; see A.2 above for a list of species onsite; see species-specific regulations for Standards Areas and Coastal Zone if relevant)
- ❒ Regulations related to clearing and grubbing and brush management (Sec. 5.3.1)

3. Special Requirements

- ❒ Project is adjacent to a preserve boundary –Adjacency Guidelines (Sec. 5.4.1)
- ❒ Project is within the Coastal Zone (Sec. 5.4.2)

C. Biological Impact Analysis

- ❒ **Impacts sufficiently analyzed, including the following elements (Sec. 7.0)**
  - ___ Focused species surveys for all potentially occurring species were conducted at the appropriate time of year, and are considered "recent" (Table 1; Sec. 6.0)
  - ___ A wetlands delineation was conducted if riparian or wetland habitat occurs on site (Sec. 6.0)
  - ___ Appropriate level of impact quantification (e.g., habitat acreage and number/location of sensitive species)
  - ___ Temporary and permanent impacts quantified and described separately
  - ___ Direct and indirect impacts described separately
  - ___ Cumulative impacts discussed

- ❒ **Supporting Documentation (as necessary)**
  - ___ Copies of reports for general biological resources surveys and focused species surveys
  - ___ GIS data files with habitat mapping and species location points
  - ___ Wetlands delineation report
  - ___ Schematics/or plans for structures such as fencing, boardwalks, facilities, etc.

D. Impact Mitigation Requirements

❒ **The following mitigation requirements have been satisfied**

___ Location-specific mitigation requirements (Sec. 8.2-8.3)

___ Mitigation requirements pertaining to Adjacency Standards and Coastal Zone standards (Sec. 8.4)

___ Upland and/or wetland buffers have been established (Sec. 8.1.1 outside of the Coastal Zone, and 8.4.2 inside of the Coastal Zone).

___ Habitat-specific mitigation requirements have been satisfied, including habitats with an asterisk "*" (Sec.8.1.1; see A.1. above)

___ Habitat impacts mitigated through creation, restoration, or enhancement (Sec. 8.1.2)

___ Species-specific mitigation requirements, including mitigation for nesting birds (Sec.8.1.3, see A.2. above)

___ Impacts related to clearing, grubbing, fuel modification zones (Sec. 5.3.1, and 8.1.3)

___ Construction-related impacts (Sec. 8.1.3; Appendix A: Standard Impact Mitigation Measures)

___ City projects and mitigation at Lake Calavera Mitigation Parcel (Sec. 8.1.1)

❒ **Supporting Documentation (as necessary)**

___ Documentation showing that impacts to wetlands and other sensitive habitats were avoided to the maximum extent possible

___ Mitigation Monitoring Reporting Plan (MMRP)

___ Restoration/landscaping plan, including restoration monitoring plan (Sec. 8.1.2)

___ Standard Impact Mitigation Measures (see Appendix A)

___ Storm Water Pollution Prevention Plan (SWPPP)

E. Environmental Documentation

❒ **Biological Surveys (Sec. 6.0, Evaluation of Baseline Conditions)**

___ Literature search and GIS database query for sensitive biological resources

___ General biological surveys to determine presence and location of sensitive species

___ Focused species surveys for known or potentially occurring listed (rare, threatened, and endangered) or endemic species

___ Updated vegetation communities mapping and sensitive habitat delineation

___ Jurisdictional wetlands delineation

___ Other (e.g., vernal pool surveys, raptor nests, species-specific habitat assessments, etc.)

❒ **Biological Resources Technical Report (Sec. 9.0)**

___ Project description and location

___ Existing conditions (e.g., vegetation communities, plants, animals, sensitive biological resources, jurisdictional wetlands) including quantification of acres, and numbers/locations of covered and other sensitive species

___ Impact analysis (quantification of impacts to sensitive species, sensitive habitats, and jurisdictional wetlands); include analysis of cumulative impacts if required

___ Graphics showing project vicinity, project footprint, existing conditions, and potential impacts

___ Mitigation measures (including avoidance and minimization) to reduce impacts to below a level of significance, and to compensate for impacted habitat

❒ **Supporting Material** (See C and D above.)

F. Permits and Amendments

❒ **HMP Permit** -for habitat impacts within the City (Sec. 10)

❒ **Incidental Take Permit** -for take of covered state or federally-listed species (Sec. 10)

❒ **Minor Amendment (HMP Section E.3)**

___ Consistency Finding (for impacts within a Standards Area)

___ Equivalency Finding (HMP Hardline boundary changes that do not alter acreage of preserved lands)

❒ **Major Amendment (HMP Section E.3)**

___ HMP boundary changes that result in changes to acreage of preserved lands

❒ **Other Permits that May Be Required (Sec. 10)**

___ Clean Water Act 404 permit (ACOE) –impacts to wetlands and waters within federal jurisdiction

___ Clean Water Act 401 certification (RWQCB) –impacts to wetlands and waters within federal jurisdiction

___ Fish and Game Code 1600 Streambed Alteration Agreement (CDFG) –impacts to wetlands and waters within CDFG jurisdiction

___ Federal 10(a) Incidental Take Permit/Section 7 Consultation (USFWS) –impacts to non-covered state or federally listed species

___ CESA Incidental Take Permit (CDFG) –Impacts to non-covered state listed species

5.0 Overview of HMP Regulations

5.1 Regulatory Context

All development projects and fuel modification activities in the city shall comply with the guidelines provided in this document. The guidelines were developed to be consistent with policies, regulations, and ordinances that pertain to habitat and species conservation within the City of Carlsbad, including the following:

- National Environmental Policy Act (NEPA)
- Federal Endangered Species Act (FESA)
- Federal Clean Water Act (CWA)
- Federal Migratory Bird Treaty Act
- California Environmental Quality Act (CEQA)
- California Endangered Species Act (CESA)
- California Fish and Game Code
- California Coastal Act
- Multiple Habitat Conservation Program (MHCP)
- City's MHCP Subarea Plan/Habitat Management Plan (HMP)
- HMP Implementing Agreement (IA)
- Open Space Management Plan (OSMP)
- Conservation and Open Space Element of the City of Carlsbad General Plan
- City Municipal Code
    - 21.33 O-S Open Space Zone
    - 21.53 Uses Generally
    - 21.95 Hillside Development Regulations
    - 21.203 Coastal Resources Protection Overlay Zone
    - 21.210 Habitat Preservation and Management Requirements
- Local Coastal Program (LCP)

5.2 Project Location

A project's location with respect to the HMP study area will help determine the regulations that apply to a given project. A project may be:

- Within a Hardline Area (Proposed or Existing)
- Within a Standards Area

- Outside of the HMP Planning Area
- Within an area that is exempt from the HMP
    - In an area with a pre-approved HCP
    - In county-owned land marked "not a part" in the HMP (Figure 28)
- Within the Coastal Zone

A summary of regulations pertaining to each of these scenarios is given below; however, projects should always be evaluated against the original HMP, MHCP, codes, ordinances and other regulatory documents. References to specific pages or sections of the HMP and MHCP are provided as necessary for further reference.

5.2.1 Development within Hardline Preserve Areas

Development located within or encroaching into Proposed or Existing Hardline Preserve Areas is prohibited in most cases. Exceptions may be processed as a minor or major amendment. In addition, some management activities that might cause impacts, such as installing fences or educational kiosks, are consistent with the HMP. In addition to the references below, refer to Guideline Sections 5.3, and 5.4 for more regulatory information related to general HMP compliance and Special Requirements.

- Minor Amendment. Minor adjustments to hardline boundaries that result in no net loss of the quality or quantity of habitat are allowed if processed as a Minor Amendment through an Equivalency Finding (HMP p. E-3; IA Section 20, p. 29).
- Major Amendment. A Major Amendment is required if lands are removed from conserved areas or if a hardline boundary adjustment results in a net loss of habitat or a reduction in habitat quality (HMP p. E-4; IA Section 20, p. 29).
- Management related impacts. Certain types of management or monitoring related projects may be permitted within a preserve area if the project is demonstrated to benefit the preserve in the long term. Impacts to habitat or species would require a Minor or Major Amendment. Refer to HMP Section F.2 Management and Monitoring Actions for more information:

    A. Habitat Restoration and Revegetation, p. F-8
    B. Recreation and Public Access, p. F-11
    C. Hydrology and Flood Control, p. F-14
    D. Species Introduction, p. F-15
    E. Enforcement, p. F-15
    F. Adaptive Management, p. F-15

G. Monitoring, p. F-16

5.2.2 Standards Areas

Standards Areas are properties within the preserve system for which Hardline Areas have not been finalized (HMP Figure 26). To guide development in a manner that is most beneficial to the preserve system, biological resource issues, conservation goals and planning standards have been developed for each Local Facilities Management Zone (LFMZ). Every project within a Standards Area must comply with the planning standards developed for the LFMZ in which it occurs. These standards should be consulted prior to the design phase of every development project, and the following points should be kept in mind.

- HMP Section D.3.C (p. D-73) provides a description of planning standards for each zone.
- The standards are very specific with regard to species, habitat, and particular properties, and should therefore be reviewed carefully. Unless it is clearly stated that the standards only apply to a particular property within a LFMZ, the standards will apply to all properties identified as a Standards Area within a zone.
- To allow for reasonable economic use of the properties, the standards allow at least 25% of a property to be developed in the least environmentally damaging location.
- The no-net loss of wetlands and riparian habitat standard applies to all zones.
- All future projects within a Standards Area must be processed through a Consistency Finding (a type of Minor Amendment) to ensure consistency with zone-specific conservation standards before they can proceed through the normal City review process (HMP page E-3).
- As part of the Consistency Finding process, the projects are also assessed for Special Requirements and general HMP compliance, as described below.

5.2.3 Outside of the HMP Planning Area

Properties outside of the HMP planning area are labeled as "Development Areas" in HMP Figure 28 (i.e., areas that are not within Existing Hardline, Proposed Hardline, or Standards Areas). These areas are not subject to LFM Zone-specific standards; however these areas are still subject to the Measures to Minimize Impact on HMP Species and Mitigation Requirements (HMP p. D-90), and special requirements, described in Sections 5.3 and 5.4 below.

5.2.4 Exempted Areas

Areas subject to pre-HMP take agreements are exempt from the HMP. See HMP Section A.8 (p. A-4). Approved projects include:

- Arroyo La Costa
- Rancho Carillo
- Rancho Verde
- Carlsbad Fieldstone Habitat Conservation Plan (Villages of La Costa/Santa Fe Road); see page F-6 for additional information.

In addition, areas marked "Not a Part" on the HMP Figure 28 are owned by the County of San Diego or Carlsbad Unified School District; development in these areas is not processed through the HMP.

5.3 General HMP Compliance

All projects, whether inside or outside of the HMP Planning Area, will be reviewed for compliance with the general regulations described in this section. If any conflicts exist with regulations pertaining to Hardline Areas, Standards Areas or Special Requirements, the more restrictive regulations apply. This section summarizes the general standards for potential impacts to habitat, include clearing or grading and species-specific regulations. Mitigation requirements, which are covered in Section 8.0, must also be met.

5.3.1 Habitat

Uplands

- Impacts to uplands must be avoided and/or minimized to the maximum extent possible (HMP p. 90).
- Standards for habitat conservation are given for projects in a Standards Area (HMP p. D-73) and within the Coastal Zone (Sec. 5.4.2, below).
- Uplands are subject to a no net loss of oak woodland standard within the City limits (100% conservation of Engelmann oak woodlands and major scrub oak populations). However, smaller populations of scrub oak may be conserved at 60% (HMP Tables 9 and 11).
- Other requirements are discussed in the impact mitigation section (Section 6.0).

Wetlands

- The impact analysis will be part of the CEQA process, and requires an analysis of impacts and alternatives, and an analysis of the value and function of affected habitat (see HMP Section D.6, p. D-90 for more details).
- The no net loss of wetlands or riparian habitat standard applies to all areas within Carlsbad.
- Impacts to wetlands and riparian habitat must be (in the order given):
  - Avoided to maximum extent possible, then
  - Minimized to the maximum extent possible, and
  - Mitigated in ways that ensure no net loss (including a temporary loss) of habitat value or function.
- The effort to avoid and minimize impacts must be documented to illustrate that other alternatives were considered.
- Properties within or adjacent to lagoons in the HMP shall adhere to the Conditions for Estuarine Species (MHCP Vol II, Appendix E).
- Whether or not an impact is avoidable will be decided on a case-by-case basis. Examples include impacts to allow reasonable use of a parcel entirely constrained by wetlands, essential public facilities where no feasible alternative exists, or roads that are the only access to the developable portion of the site.
- Impacts to wetlands require state and federal permits that must be obtained independently from the HMP permit.

Clearing, Grubbing, Grading and Fuel Management

- Clearing and grubbing are prohibited during wildlife breeding seasons (Zoning Ordinance 21.210.040); this includes covered bird species, migratory birds, and raptors. All construction activities are prohibited within 300 feet of an active nest, (500 feet for listed species).
- All fuel modification activities are subject to HMP regulations.
- Grading of habitat in the city, including clearing and grubbing, is prohibited until all of the processing and permitting requirements are fulfilled. (Zoning Ordinance 21.210.030).
- Bare surface grading on slopes for fire control is prohibited. Adequate surface cover should be left to prevent surface erosion.

5.3.2 Species-Specific Regulations

In general, most MHCP-covered species are protected through habitat conservation; however, as a condition of the Incidental Take Authorization issued to the City by the Wildlife Agencies under the HMP, certain species-specific conservation standards must be met for potential impacts to covered species within and outside of the preserve. In addition, certain non-covered species (federally or state listed species and narrow endemics) are regulated by the Wildlife Agencies and, therefore, impacts to these species may require additional permits. Species-specific information can be obtained from the following sources.

- Conditions for coverage, conservation goals, management recommendations, and impact mitigation measures for covered species are summarized in HMP Table 9, p. D-97 and MHCP Vol II. See HMP Appendix C for additional species-specific information, including basis for take authorization.
- The conservation of "critical" and "major" populations may be a condition of coverage for a given species. The locations of these populations are identified in the Conservation Analysis for each species (MHCP Volume II).
- The Narrow Endemic Species and Critical Population Policies should be consulted as necessary (MHCP Vol II, Appendix D).
- Conditions for Estuarine Species should be consulted for any projects that occur adjacent to the lagoons (MHCP Vol II, Appendix E)

Additional information for the following species is given below: (A) covered species, (B) narrow endemic species, (C) listed species, and (D) no-take species. A list of all of these species is given in Table 1. Species currently covered by the HMP are in shaded in gray.

A. HMP Covered Species

- Every project within the City of Carlsbad must be evaluated with respect to these conditions.
- Additional measures required for the following species are given in HMP Section D.6 (pp. D-91 to D-95). These measures include the implementation of a 100-foot buffer from the outer edge of occupied habitat within which development is prohibited.
    - Harbison's dun skipper butterfly
    - Least Bell's vireo
    - Southwestern flycatcher

Table 1. Listed Species Covered by the HMP

Common Name*	Scientific Name	Listing Status[1]	Covered by HMP[2]	FP[3]	NE[4]	Survey Window[5]
Plants						
Blochman's Dudleya	*Dudleya blochmaniae* ssp. *blochmaniae*				X	Apr – Jun
California Orcutt Grass	*Orcuttia californica*	FE/SE	List 3		X	Apr – Aug
Cliff Spurge	*Euphorbia misera*		X			Dec – Aug
Del Mar Manzanita	*Arctostaphylos glandulosa* ssp. c*rassifolia*	FE/ -	List 3		X	Dec – Jun
Del Mar Mesa Sand Aster	*Corethrogyne filaginifolia* var. *linifolia*		List 3		X	May – Sep
Encinitas Baccharis	*Baccharis vanessae*	FT/SE	List 3		X	Aug – Nov
Engelmann Oak	*Quercus engelmannii*		List 2			Mar – Jun
Little Mousetail	*Myosurus minimus* ssp. *apus*		List 3		X	Mar – Jun
Nuttall's Scrub Oak	*Quercus dumosa*		X			Feb – Aug
Orcutt's Brodiaea	*Brodiaea orcuttii*				X	May – Jun
Orcutt's Hazardia	*Hazardia orcuttii*	- / ST	X		X	Aug – Oct
Orcutt's Spineflower	*Chorizanthe orcuttiana*	FE/SE	X		X	Mar – May
San Diego Ambrosia	*Ambrosia pumila*	FE/ -	List 2		X	Apr – Aug
San Diego Barrel Cactus	*Ferocactus viridenscens*		List 2			May – Jun
San Diego Button-Celery	*Eryngium aristulatum* var. *parishii*	FE/SE	List 3		X	Apr – Jun
San Diego Goldenstar	*Muilla clevelandii*				X	Apr – May
San Diego Marsh Elder	*Iva Hayesiana*		List 3			Apr – Oct
San Diego Thorn-mint	*Acanthomintha illicifolia*	FT/SE	List 2		X	Apr – Jun
Short-leaved dudleya	*Dudleya blochmaniae* ssp. *brevifolia*	- /SE			X	April
Spreading Navarretia	*Navarretia fossalis*	FT/ -	List 3		X	Apr – Jun
Sticky Dudleya	*Dudleya viscida*		List 2			May – Jun
Summer Holly	*Comarostaphylis diversifolia* ssp. *diversifolia*		List 3			Apr – Jun
Thread-leaved Brodiaea	*Brodiaea filifolia*	FT/SE	X		X	Mar - Jun

Common Name*	Scientific Name	Listing Status[1]	Covered by HMP[2]	FP[3]	NE[4]	Survey Window[5]
Torrey Pine	*Pinus torreyana ssp. torreyana*		List 3			All year
Wart-stemmed Ceanothus	*Ceanothus verrucosus*		List 2			Dec – May
Invertebrates						
Harbison's Dun Skipper	*Euphyes vestries harbisoni*		X		X	Jun 21 – Jul 31 (no protocol)
Hermes Copper Butterfly	*Lycaena hermes*				X	May 21 – Jun 30 (no protocol)
Quino checkerspot butterfly	*Euphydryas editha quino*	FE/ -				Feb 15 – May 7[6] 5 surveys, 7 days apart
Riverside Fairy Shrimp	*Streptocephalus woottoni*	FE/ -	List 3		X	Dec – Apr, wet season
Salt Marsh (Wandering) Skipper	*Panoquina errans*		X			Apr – Sep 30 (no protocol)
San Diego Fairy Shrimp	*Branchinecta sandiegoensis*	FE/ -	List 3		X	Dec – Apr, wet season
Amphibians/Reptiles						
Arroyo Toad	*Bufo californicus*	FE/ -			X	Mar 15 – Jul 1 6 day and 6 night surveys
Orange-throated Whiptail	*Aspidoscelis hyperythra*		X			All year
Birds						
American Peregrine Falcon	*Falco peregrinus anatum*	FD/SE	X	X		Mar – May (no protocol)
Belding's Savannah Sparrow	*Passerculus sandwichensis beldingi*	- /SE	X			Jan – Aug (no protocol)
California Brown Pelican	*Pelecanus occidentalis californicus*	FE/SE	X	X		Mar – May (no protocol)
California Least Tern	*Sterna antillarum browni*	FE/SE	X	X		Apr 1 – Sept 15 No protocol, every other week
California Gnatcatcher	*Polioptila californica californica*	FT/ -	X			Feb 15 – Aug 30 3 surveys, 7 days apart
Cooper's Hawk	*Accipiter cooperi*		X			Apr – Jun (no protocol)
Elegant Tern	*Sterna elegans*		X			Apr – Jul (no protocol)

Common Name*	Scientific Name	Listing Status[1]	Covered by HMP[2]	FP[3]	NE[4]	Survey Window[5]
Large-billed Savannah Sparrow	*Passerculus sandwichensis rostratus*		X			Jan – Aug (no protocol)
Least Bell's Vireo	*Vireo bellii pusillus*	FE/SE	X			Apr 10 – Jul 31 8 surveys, 10 days apart
Light-footed Clapper Rail	*Rallus longirostris levipes*	FE/SE	X	X		Mar – Jul (no protocol)
Osprey	*Pandion haliaetus*		X			Apr – Aug (no protocol)
Rufous-crowned Sparrow	*Aimophila ruficeps canescens*		X			Mar – Jun (no protocol)
Southwestern Willow Flycatcher	*Empidonax traillii extimus*	FE/SE	X			May 15 – Jul 17[7] 5 surveys
Western Snowy Plover	*Charadrius alexandrinus nivosus*	FT/ -	X			Apr 1 – Sept 15 No protocol, every other week
White-faced Ibis	*Plegadis chihi*		X			Apr – Jul (no protocol)
White-tailed Kite	*Elanus leucurus*			X		Jan – Aug (no protocol)
Yellow-breasted Chat	*Icteria virens*		X			May – Aug (no protocol)
Mammals						
Pacific Pocket Mouse	*Perognathus longimembris pacificus*	FE/ -			X	May 1 – Aug 31, 7 nights in a row
Stephen's Kangaroo Rat	*Dipodomys stephensi*	FE/ST				All year, 5 nights in a row Sept 15 – Feb 15 preferred

[1] Key to Listing Status: FE - Federally Endangered, SE - State Endangered, FT - Federally Threatened, ST - State Threatened, FD – Federally Delisted, SSC – state Species of Special Concern

[2] List 2: Species coverage contingent on other MHCP Subarea plans being permitted; List 3: Species coverage contingent upon funding for management of conserved areas

[3] FP = Fully Protected

[4] NE = Narrow Endemic species

[5] Survey window includes blooming period for plants, USFWS survey protocol window for federally listed species, and breeding season for birds. Animal species for which there is no protocol can be surveyed at any time of the year; however breeding season is usually the best time to survey these species. The survey window for all non-federally listed butterfly species recommended by butterfly expert Michael Kline (Kline-Edwards Professional Consulting).

[6] The survey window for the Quino checkerspot butterfly is actually determined by the surveyor based on results of ongoing monitoring by USFWS

[7] At least 1 survey for southwestern willow flycatcher, must be conducted within each survey window: (1) May 15 – May 31, (2) June 1 – June 21, (3) June 22 – July 17.

B. Narrow Endemic Species

Narrow endemic species (1) have restricted geographic distribution, soil affinities, and/or habitats, (2) occur in the City, and (3) the substantial loss of which might jeopardize the long-term survival of the species. See MHCP Narrow Endemic Species Policy (MHCP Vol II, Appendix D).

- If land is within the preserve system, 100% conservation of endemic species populations is required (HMP Section D.6, p. D-90).
- If land is outside of the HMP preserve, impacts to narrow endemic species shall be avoided to the maximum extent possible, especially critical and major populations. If impacts cannot be avoided, at least 80% conservation of narrow endemic species populations is required within the development property.
- The list of species in Table 1 above includes narrow endemic species that occur or potentially occur within Carlsbad.
- HMP Table 9 (p. D-97) includes species-specific conditions for coverage for narrow endemic species.

C. Listed Species (Rare, Threatened, and Endangered)

Table 3 shows the federally or state listed species that are covered by the HMP. The City has been granted authorization to issue Incidental Take Permits for impacts to these species. Species-specific HMP permit conditions are listed in HMP Table 9, Section D and HMP Section D.6 (pp. 91-96). All impacts to listed species that are *not* covered by the HMP will be subject to state and federal permits.

D. No-Take Species

No-take species are those for which "take" (harm, harass, or kill) has not been authorized. The U.S. Fish and Wildlife Service (USFWS) take permit conditions state that take has *not* been authorized for the western snowy plover, the elegant tern, Fully Protected species or Species from HMP Table 2, List 2 and List 3 (see below). Therefore, projects that may impact any of these species (a) must be redesigned to avoid all impacts to these species or (b) additional state and/or federal permits may be required. In some instances, take authorization is contingent upon other MHCP subarea plans being approved or upon funding for management of conserved areas.

Fully Protected species. Pursuant to state and federal regulations, no take of Fully Protected species will be authorized within the City of Carlsbad. Fully protected species in the HMP area include:

- California brown pelican
- American peregrine falcon
- White-tailed Kite
- Light-footed clapper rail
- California least tern

List 2 Species (HMP Table 2), contingent on other MHCP subarea plans being permitted, because the long-term viability of the species cannot be adequately maintained until the entire regional MHCP preserve is protected.

- San Diego thornmint
- San Diego ambrosia
- Wart-stemmed ceanothus
- Sticky dudleya
- San Diego barrel cactus
- Engelmann oak

List 3 Species (HMP Table 3), contingent on funding for management of conserved areas because the long-term viability of the species cannot be adequately maintained unless sufficient funding is in place.

- Del Mar Manzanita
- Encinitas baccharis
- Summer holly
- Del Mar sand aster
- San Diego button-celery
- San Diego marsh elder
- Little mousetail
- Spreading navarretia
- California orcutt grass
- Torrey pine
- Riverside fairy shrimp
- San Diego fairy shrimp

5.4 Special Requirements

During the HMP compliance process, every project will be assessed for Special Requirements which pertain to projects that are adjacent to a Hardline Preserve or within the Coastal Zone. Each of these Special Requirements will be summarized below.

5.4.1 Adjacency Standards

Direct and indirect impacts may negatively affect sensitive species and sensitive habitats that are adjacent to a property that is being or has been developed. For example, temporary impacts during construction, such as noise and dust, could affect nearby nesting birds. Permanent impacts might include edge effects which could result in invasion by non-native plant species. To avoid these potential impacts, Adjacency Standards have been developed, which apply to properties that are adjacent to conserved habitat areas or undeveloped portions of a Standards Area that might be conserved in the

future. The standards address issues of fire management, erosion control, landscaping, fencing, signage, indirect impacts, and non-native species control.

A selection of project-related HMP Adjacency Standards is given below; however, refer to HMP Section F, pp. F-16 to F-24 and MHCP Vol I, Section 6.2 for more details. In addition, projects that occur within or adjacent to lagoons shall adhere to the Conditions for Estuarine Species (MHCP Vol II, Appendix E).

- Fuel management. Where existing Hardline Preserve areas are adjacent to *existing* developed areas, the fuel management zone may continue to encroach into the preserve. However, where *new* development or preservation is planned, fuel management must be incorporated within the development boundaries and can not encroach into the preserve.
- Positioning of fuel modification areas. Fuel reduction zones, fire breaks and access routes should be positioned to (1) avoid sensitive biological resources, (2) be located at the top or bottom of (not across) a slope, or (3) be located along existing fire breaks where available.
- Erosion control measures should be implemented to avoid new surface drainage or erosion within or near the preserve.
- The use of non-native or invasive plant species in landscaping for public projects adjacent to preserves is prohibited.
- Native plants used for restoration or revegetation should be obtained from local genetic stock to avoid genetic contamination of native species.
- Irrigation runoff should be prevented from entering into the preserve from adjacent landscaping to reduce nitrogen, pesticides, and excess moisture.
- Signage and fencing should be used as necessary to prevent harmful or unauthorized use of the adjacent preserve, and to protect animals from road kill mortality. Fences that restrict animal movement across movement corridors and habitat linkages should be removed.
- Lighting adjacent to preserves should be reduced (low pressure sodium lighting) and/or shielded.
- Noise. The use of noise generating equipment should be avoided during the breeding season. Noise levels inside the preserve should not exceed 60 dBA Leq.
- Public outreach should be used to educate the residents of adjacent neighborhoods about not using invasive species in landscaping, overuse of pesticides and fertilizers, and the problem of unleashed pets and pet waste.

5.4.2 Development within the Coastal Zone

The California Coastal Commission has jurisdiction over lands within the Coastal Zone. As such, there is a special set of conservation standards which apply to all properties in this area (Table 2). Each topic in Table 2 includes a reference to the corresponding subsection in HMP Section D.7 (pp. D-114 through D-121). Because Table 2 only summarizes this information, the details in the HMP should be reviewed carefully.

Table 2. Conservation Standards within the Coastal Zone

Resource/HMP Reference*	Conservation Standard within the Coastal Zone
Environmentally Sensitive Habitat Areas (ESHA) **7-1**	ESHA shall be protected against significant disruption of habitat values. Only uses dependent on those resources shall be allowed within those areas. ESHA is defined as "any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments."
Coastal Sage Scrub **7-2**	Conserve a minimum of 67% of the coastal sage scrub habitat and 75% of the gnatcatchers onsite.
Wetlands **7-6**	No impacts to wetlands are allowed except where stated in California Public Resources Code Section 30233.
Wetlands **7-7**	If impacts to wetlands are allowed, mitigation shall be provided at a ratio of 3:1 for riparian impacts and 4:1 for impacts to saltwater or freshwater wetland, or marsh.
No Net Loss of Habitat **7-8**	A no net loss standard applies to coastal sage scrub, maritime succulent scrub, southern maritime chaparral, southern mixed chaparral, native grassland, and oak woodland. Mitigation shall include a creation component that achieves the no-net-loss standard. Substantial restoration may be substituted for creation if approved by wildlife agencies and CCC.
Upland Habitat **7-9**	Mitigation will typically include creation at a ratio of least 1:1. Onsite mitigation is not eligible for mitigation credit in the Coastal Zone. Onsite or offsite areas may be used for mitigation if habitat is disturbed and suitable for restoration or enhancement, or if habitat is devoid of habitat value and therefore eligible for the 1:1 creation/substantial restoration mitigation component. Mitigation should be provided within the Coastal Zone. Refer to 7-9 for more details, including mitigation ratios and habitat creation requirements (summarized in Table 6 below).
Highly Constrained Properties **7-10**	(a) If more than 80% of property is covered with ESHA, at least 75% of the property shall be conserved, OR (b) If the City approves a hardline preserve boundary for these properties as part of the HMP, the amount of onsite preservation as identified in the hardline boundary will apply.
Buffers and Fuel Modification Zones/ **7-11**	• Minimum buffers between all preserved habitat and development are (a) 100 ft for wetlands; (b) 50 ft for riparian areas; (c) 20 ft for native uplands • No development, grading, or alteration shall occur within a buffer except (a) Fuel modification in Zone 3 to max of 20 ft for upland and non-riparian habitat, and not within 50 ft of riparian, wetland or oak woodland habitat; (b) some recreational trails and paths (see 7-11 for details) • Buffer areas that do not contain native habitat will be landscaped using native plants.
Grading and Landscaping **7-12**	See model grading ordinance in Carlsbad Master Drainage Plan; (a) Grading in the Coastal Zone has generally been prohibited during the rainy season, Oct 1 to April 1; (however, pursuant to revisions to the City Zoning Ordinance processed through a Local Coastal Plan Amendment, grading is allowed if appropriate Best Management Practices (BMPs) are established); (b) All graded areas will be landscaped by October 1 to reduce erosion. Exceptions to these guidelines may be approved as described in 7-12. For example, habitat should not be cleared during the bird breeding season (Sept 15 – March 15) unless birds are cleared from the habitat first.
Parcel-specific Standards **7-13, 7-14**	The following properties have parcel specific standards: (a) city owned lands adjacent to Macario Canyon and Veterans Memorial Park, and (b) specific parcels in Zones 20 and 21 that are located within biological core and linkage areas; see HMP 7-14 for a list.

* HMP Section D.7, pp. D-114-121

6.0 Evaluation of Baseline Conditions

To have a clear understanding of the biological resources that might be affected by a project, it is important to acquire all available data, including data from recent surveys. These data will be used to design a project that minimizes potential impacts to sensitive habitats and species, to quantify these impacts, and to prepare a mitigation plan. This information will be presented in a BTR (Section 9.0), and can be used to evaluate compliance with both CEQA and the HMP. A baseline evaluation (i.e., description of existing biological conditions) can be made by taking the following steps:

1. Potentially occurring species. Conduct an assessment of *potentially* occurring sensitive species by assessing onsite habitat and documented species locations:
   a. Conduct a review of pertinent literature.
   b. Query current GIS species databases (CNDDB, SANDAG, SDNHM, etc.) and vegetation and soils mapping layers for sensitive habitat and sensitive species locations.
2. Vegetation mapping. Conduct onsite vegetation communities mapping (ground-truth existing mapping), using the modified Holland system of classification (Oberbauer 2005) to update City's GIS vegetation layer. Refer to MHCP Appendix B, Section B.7 for a clear definition of each vegetation community. Note that "ruderal" and "exotic species" are not acceptable classifications. All vegetation types must fit into the modified Holland classification scheme.
3. Jurisdictional wetlands delineation. Conduct jurisdictional wetlands delineation if any wetland or riparian habitat occurs on the property. Wetlands within the Coastal Zone must be delineated following the definitions and boundary descriptions in Section 13577 of the California Code of Regulations. Outside the Coastal Zone, wetlands shall be defined by following the Cowardin Wetland Classification System (Cowardin et al. 1979).
4. General biological resources and wildlife movement assessment. Conduct a general biological resources assessment to identify the flora, fauna, potential habitat for sensitive species and wildlife movement corridors within the property. Field notes should include locations of sensitive plants and animals observed, and a list of non-sensitive species. The assessment should be conducted in the study area, which consists of the project footprint (including areas to be impacted and conserved) plus a 100-ft survey buffer.
5. Focused species surveys. Use the results of steps 1 – 4 to determine additional species-specific surveys that should be conducted.

a. Identify time of year each survey should be conducted based on species biology. Surveys shall be conducted at the appropriate time of year, as defined in Table 1.

b. Surveys for nesting birds shall be conducted in suitable habitat within the project area and within at least 300 feet (500 feet for listed species) of potential impact areas.

c. The survey window can be adjusted based on climate variation for a given year (amount and timing of rain, drought, etc.). Seasonal conditions (to be determined by the project biologist) must be suitable for blooming plants. For example, if winter rains were scant in a given year, thread-leaved brodiaea might not bloom that season, and therefore might not be detected even if it is present.

d. Conduct focused species surveys as necessary for covered species, state or federally listed species, and narrow endemic species.

e. Biological surveys must be recent to be used for a project impact analysis. Surveys should be no more than one year old (to be determined by the City and/or Agencies) to be considered "recent" if a species is presumed absent.

6. Provide spatial GIS data to the City. Compile species data into a GIS database, and attribute points with species name, population size, and observation date. Create a baseline evaluation graphic. All GIS data, including habitat mapping, jurisdictional wetlands delineation, and species location points, should be provided to the City.

7.0 Biological Impact Analysis

This section describes how to quantify and describe potential impacts for a proposed project, and how to use this information to revise the project's design. The process outlined below should be reflected in the project's BTR.

A general impact analysis should follow these steps:

- Overlay the baseline evaluation graphic with the project footprint (in GIS if feasible).
- Evaluate and quantify (e.g., acres of each vegetation community, numbers and locations of each sensitive species, etc.) the potential impacts to sensitive biological resources within and adjacent to the project footprint.
    - Analyze and quantify permanent and temporary impacts
    - Evaluate direct and indirect impacts
    - Evaluate significant (mitigable or non-mitigable) and non-significant impacts
- Demonstrate (with documentation) that the project was designed to first avoid, and then minimize impacts to sensitive biological resources.
- Review HMP regulations to determine allowable impact limits.
- Redesign project if necessary to reduce impacts, or assess appropriate mitigation requirements (see next section).

Analysis of impacts to wetlands must follow these steps:

- Quantify impacts to CDFG and Corps jurisdictional wetlands and waters.
- Determine whether impacts are avoidable or unavoidable.
- For unavoidable impacts, determine allowable amount of encroachment per HMP.
- Determine appropriate mitigation for these impacts.

8.0 Mitigation

All significant impacts to sensitive biological resources in the City of Carlsbad require mitigation. Project-specific BTRs and CEQA documentation must outline impact mitigation with enough detail to illustrate how they will reduce impacts to a level below significant, and satisfy HMP and CEQA requirements. This section describes general mitigation regulations and guidelines, and then discusses regulations that pertain to Hardline Areas, Standards Areas, and those that have Special Requirements (e.g. adjacency standards and Coastal Zone Standards).

In addition to the mitigation requirements outlined in this section, all projects must implement standard impact mitigation measures to avoid and/or minimize impacts and erosion during the project design phase, prior to construction, and during construction (Appendix A). These mitigation measures were compiled from the following sources: MHCP Vol I, Section 6.2.3; MHCP Vol. II, Appendix B; HMP p. D-95.

8.1 General Mitigation Requirements

In addition to the mitigation requirements below, all projects should incorporate Standard Mitigation Measures (Appendix A) into the project design and mitigation program. The mitigation measures were developed from MHCP Vol I, Sec 6.2.3; MHCP Vol. II, Appendix B; HMP p. D-95; and numerous Agency comment letters from past projects.

8.1.1 Habitat-Based Mitigation

Note that all projects within the Coastal Zone may have more restrictive requirements, which are discussed in See 8.4.2.

- Impact avoidance. Impacts will be avoided, minimized, and mitigated to the greatest extent possible. Development will be limited to disturbed areas whenever possible.
- Onsite mitigation is preferred over offsite mitigation. Habitat conserved onsite will be credited towards mitigation (outside of the Coastal Zone only) (HMP p. D-90).
- Offsite mitigation. If $\geq$ 67% of natural habitat within the property is preserved, no offsite mitigation will be required if (a) the project is consistent with the HMP, (b) the project would not interfere with the City's HMP obligations, and (c) the site would benefit the City's preserve system (HMP p. D-90). This applies only to projects outside of the Coastal Zone.

- Mitigation ratios. Impacts to sensitive habitat are subject to the mitigation ratios in Table 3 (HMP Table 11, p. D-113). However, under certain conditions (e.g., habitat creation/enhancement/restoration, impacts to wetlands, or impacts within the Coastal Zone), additional mitigation measures or higher mitigation ratios may be required.
- Projects adjacent to the preserve. Refer to sections 8.4.1 for a summary of Adjacency Standards.
- Coastal Zone. Refer to 8.4.2 for mitigation requirements for projects within the Coastal Zone.

Table 3. Mitigation Ratios for Impacts to HMP Habitats (HMP Table 11, p. D-113)

Habitat Group and Type	Mitigation Ratio/Requirement by Type of Impacted Habitat
A. Coastal salt marsh, alkali marsh, freshwater marsh, estuarine, salt pan/mudflats, riparian forest, riparian woodland, riparian scrub, vernal pools, disturbed wetlands, flood channel, fresh water Engelmann oak woodland, coast live oak woodland[1]	No net loss goal (mitigation ratio varies by type of replacement habitat).
B. Beach, southern coastal bluff scrub, maritime succulent scrub, southern maritime chaparral, native grassland	3:1[2]
C. Gnatcatcher - Occupied coastal sage scrub	2:1[3]
D. Unoccupied coastal sage scrub, coastal sage/chaparral mix, chaparral (excluding southern maritime chaparral)	1:1[4, 5]
E. Annual (non-native) grassland	0.5:1[4, 5]
F. Disturbed lands, eucalyptus, agricultural lands	Mitigation Fee

1. Group A habitats are associated with wetlands. Impacts to these habitat types are subject to review under Section 404 of the federal Clean Water Act or Section 1600 of the California Fish and Game Code.
2. It is assumed that all habitat types in Group B will be included in the proposed preserve system. Small, isolated patches of low quality southern maritime chaparral may be located outside a preserve area and maximum avoidance and onsite conservation is preferred.
3. Maximum avoidance and onsite conservation of Group C habitat is encouraged.
4. Offsite mitigation for habitat in this group which is not conserved or mitigated onsite, shall pay a per acre in lieu mitigation fee in an amount to be determined by the City Council. This fee is discussed in more detail in Section E of the Plan.
5. City projects that impact Type D, E, and F habitats will not pay the fee and will mitigate at the Lake Calavera Mitigation Parcel. These projects may mitigate out-of-kind because the objective is to build the preserve system by combining small mitigation requirements into a larger, more contiguous area. City projects that impact Type A, B, and C habitats must mitigate in-kind at the ratios stated above.

- Protective habitat buffers consistent with the HMP and Guidelines for Wetlands and Riparian Buffers shall be incorporated into project design. Note that buffers are not eligible for mitigation credit. See Section 8.4.2 for buffer requirements within the Coastal Zone.
    - 100 feet from the edge of wetland and riparian habitat (based on current permitting practices)
    - 100 feet from the edge of riparian or oak habitat occupied by the least Bell's vireo, southwestern willow flycatcher or Harbison's dun skipper butterfly (HMP D-91)
    - Land uses within 200 feet of estuarine areas which contribute to degraded water quality, changes in surface water or ground water hydrology, or increased runoff, erosion and sedimentation are prohibited (HMP D-95; MHCP Vol II, Appendix E). Note that these conditions are already incorporated into the Local Coastal Program.
- Impacts to wetland, riparian, and vernal pool habitats:
    - *Require documentation* showing that the project (1) cannot be avoided by a feasible alternative, (2) have been minimized to the maximum extent possible, and (3) will be mitigated in ways that ensure no net loss of habitat value or function (HMP p. D-90)
    - *Must be mitigated at a ratio that will be determined* by state and federal agencies; however, the MHCP recommends the ratios in Table 4 (MHCP Vol. I, Table 4-7)
    - *Require species-specific mitigation measures* for riparian habitat occupied by the Harbison's dun skipper butterfly, least Bell's vireo, southwestern willow flycatcher (HMP p. D-91)
    - *Shall be consistent with Conditions for Estuarine* Species (MHCP Vol II, Appendix E)

Table 4. Replacement Mitigation Ratios for Impacts to Wetland Vegetation Communities (MHCP Vol. 1, Table 4-7)

Wetland Vegetation Community[1]	Mitigation Ratio[2]
Coastal salt marsh	4:1
Alkali marsh	4:1
Estuarine	4:1
Saltpan/mudflats	4:1
Oak riparian forest	3:1
Riparian forest	3:1
Riparian woodland	3:1
Riparian scrub	1:1 to 2:1
Freshwater	1:1
Freshwater marsh	1:1 to 2:1
Flood channel	1:1 to 2:1
Disturbed wetlands	1:1 to 2:1
Vernal pool	2:1 to 4:1

[1] These communities are subject to the goal of no net loss in acreage, function, and biological value (see MHCP Vol I, Section 3.6.1). The highest priority will be given to impact avoidance and minimization. Replacement of habitat subject to unavoidable impact will occur through restoration or creation of substitute habitat areas, generally of the same kind and in the vicinity of the impacted habitat.

[2] Mitigation ratios for wetlands within the Coastal Zone are subject to California Coastal Commission review and are addressed in Section 8.4.2 of this document.

- In-lieu mitigation fee. Table 5 summarizes the guidelines pertaining to in-lieu mitigation fees. Additional guidance is given below.
    - Impacts to habitat type F (disturbed, eucalyptus, or agricultural lands) are usually mitigated through a per-acre in-lieu mitigation fee, unless Coastal Zone Agricultural Mitigation fee is paid for agricultural land.
    - Mitigation for impacts to habitat types D and E (unoccupied coastal sage scrub, southern mixed chaparral, scrub/chaparral mix, and annual grasslands) can be mitigated though onsite and/or offsite habitat conservation, or by payment of a per-acre in-lieu mitigation fee, or a combination of the two depending on the individual circumstances of a given project.
    - *In general*, projects outside of the HMP are encouraged to mitigate habitat types D, E, and F through the in-lieu fee unless the City determines that the habitat should be conserved (if it has biological value for the preserve). Projects inside the HMP usually mitigate type F habitats with a fee, and

type D and E habitats through onsite conservation; any mitigation that cannot be accommodated onsite can be mitigated through offsite habitat conservation or by paying an in-lieu fee (at the City's discretion).

- Each project will be evaluated with respect to the biological value of the habitat for the preserve. Evaluation criteria include (a) habitat location within the Focus Planning Area (HMP Figure 4), (b) near or adjacent to the HMP preserve (Figure 28 of HMP), (c) presence of any covered, narrow endemic, or non-covered listed species, and (d) opinions of project biologist/wildlife agencies (if consulted).
- The fee is not required if at least 67% of the habitat on a property or project is being conserved (applies only to habitat outside of the Coastal Zone).
- The fee amounts are to be determined by the City Council (HMP Section E.6, p. E-7).

Table 5. In-lieu Mitigation Fee Guidelines

Group	Habitat	Guidelines
GROUP D	Unoccupied Coastal Sage Scrub	Evaluate if any biological value for preserve or if in Coastal Zone – if not, pay fee
	Chaparral (except Southern Maritime)	Evaluate if any biological value for preserve – if not, pay fee
GROUP E	Non-native grassland	Evaluate if any biological value for preserve – if not, pay fee
GROUP F	Disturbed land (i.e. not graded in last 5 years)	Pay fee
	Agricultural land	Pay fee unless already paying Coastal Zone Agricultural Mitigation fee
	Eucalyptus Woodland	Pay fee (note potential raptor/other bird nesting and bat roosting constraints)

- Larger, connected blocks of habitat that are preserved within the property will be credited towards mitigation requirements. Small, isolated fragments do not contribute significantly to the preserve and should be subject to the fee.
- City projects will use the Lake Calavera mitigation parcel for impacts to unoccupied coastal sage scrub, mixed chaparral, and non-native grasslands.
  - See HMP Appendix B for a list of covered City projects

- Credits toward the mitigation parcel will mitigate for habitat impacts of City projects on an acre-for-acre basis for all upland habitat except for gnatcatcher-occupied coastal sage scrub, southern maritime chaparral, maritime succulent scrub, and wetlands as needed for City project-related impacts (HMP p. D-14)

- Approval of supplementary documentation. The following items will be provided to and approved by the City and/or Preserve Steward:
  - Plans for lighting, fencing, drainage, restoration and other activities that might directly or indirectly impact sensitive habitats or species; the plans will document compliance with Adjacency Standards, if applicable (HMP P. F-16)
  - Plans for landscaping adjacent to natural habitat will include the following stipulations: (1) No invasive exotic plant species (Lists A and B of the Cal-IPC exotics list) will be used in landscaping, (2) No plants that require excessive irrigation, fertilizers, or pesticides will be used in landscaping, and (3) Irrigation of landscaping within 200 feet of a hardline boundary will be controlled to prevent runoff into the preserve
  - Fencing plans will describe the type and location of fencing, including (a) permanent fencing along any urban/wildlands interface to deter unauthorized access (if deemed necessary by the City), (b) permanent fencing to direct animals toward wildlife undercrossings and away from traffic, and (c) temporary fencing to delineate the construction footprint, impact zones within the footprint, protected areas, and no-construction buffer zones

- Preserve management. The applicant will:
  - Record a Conservation Easement, as defined by California Civil Code Section 815.1 or other protective measure over all onsite and offsite mitigation land;
  - Provide proof that appropriate type and acreage of land or mitigation credits have been purchased at an approved mitigation bank or other site for offsite mitigation;
  - Select a qualified conservation entity to manage the conserved land;
  - Prepare a Property Analysis Record (PAR) to estimate costs of in-perpetuity management and monitoring;

- Provide a non-wasting endowment based on the PAR to sufficiently cover the costs of in-perpetuity management and monitoring; and
- Prepare a management plan, which will be approved by the City and Wildlife Agencies.

- Mitigation Monitoring and Reporting Program (MMRP). A compliance monitoring and reporting plan should be included as part of the overall mitigation plan to (1) confirm that mitigation is efficiently and effectively implemented, and (2) ensure that the City and Wildlife Agencies are informed of project compliance.

8.1.2 Mitigation through Habitat Creation/Restoration/Enhancement

- Mitigation within the Coastal Zone must include a minimum 1:1 creation (or substantial restoration) component.
- Upland mitigation through habitat creation, restoration, or enhancement outside of the Coastal Zone may be allowed in limited circumstances; however, a higher mitigation ratio (to be determined by the City and Agencies) may be required. Wetland mitigation through habitat creation, restoration, or enhancement outside of the Coastal Zone is often required due to the "no net loss of wetlands" standard.
- *Substantial* restoration or enhancement may be counted as creation, if approved by the City and Agencies.
- The applicant will submit final habitat restoration plans to the City and/or Agencies for review at least 30 days prior to initiating project impacts. These plans must be consistent with MHCP Vol II, Appendix C; and Vol. III; HMP pp. F-8 to F-11; and OSMP Sec. 3.1.5.

8.1.3 Species-Specific Mitigation

Mitigation Measures for Sensitive Species

- Mitigation to protect narrow endemic species and critical populations of sensitive species shall include measures such as biologically justified protective buffers as necessary to ensure no net loss of ecological function for habitat areas, wildlife movement corridors, and habitat linkages (Narrow Endemic Species Policy and Critical Populations Policy, MHCP II, Appendix D).

- Species-specific conditions for coverage in HMP Table 9 should be consulted for all covered and narrow endemic species documented or potentially occurring onsite. In addition, special conditions for the least Bell's vireo, southwestern willow flycatcher, and dun's skipper butterfly are given in the HMP, p. D-91.
- Projects which impact narrow endemic species must provide the information described in Zoning Ordinance 21.210.070.A.4.

Mitigation Measures to Avoid Impacts to Nesting Birds

Clearing and grubbing activities are generally prohibited during the bird breeding season (February 15 – September 15). The USFWS will be notified at least seven days before clearing and grubbing begins. During this activity, a qualified biologist will walk the area ahead of construction equipment to flush birds away from impact areas. The biologist will immediately report to USFWS the number and location of any federally listed birds disturbed by clearing and grubbing. No gnatcatchers will be injured or killed.

Other construction activities will also be avoided during the breeding season if feasible. If this cannot be avoided, the following measures will be taken:

- If California gnatcatchers have the potential to occur onsite, a qualified biologist will conduct a focused species gnatcatcher survey in appropriate habitat within and surrounding the project area. The surveys will consist of three visits, one week apart; the last of these will be conducted no more than three days prior to construction.
- Surveys will also be conducted by a qualified biologist in appropriate habitat for nesting raptors and migratory birds (including, but not limited to the least Bell's vireo) and within an additional 500-ft survey buffer within three days of construction.
- The USFWS will be notified immediately of any federally listed species that are located during pre-construction surveys.
- If nests of listed birds, migratory birds, raptors, or other sensitive species are located, they will be fenced with a protective buffer of at least 500 feet from active nests of listed species, and 300 feet from other sensitive bird species. All construction activity will be prohibited within this area.
- During the breeding season, construction noise will be measured regularly to maintain a threshold at or below 60dBA hourly Leq within 500 feet of breeding habitat occupied by listed species. If noise levels supersede the threshold, the

construction array will be changed or noise attenuation measures will be implemented.

8.2 Mitigation for Impacts within HMP Hardline Preserve Areas

- Impacts to biological resources are not allowed within hardline areas, unless (a) it is from a covered project, as defined in the HMP, (b) an equivalency finding results in a minor amendment and adjustment to the hardline boundaries, or (c) a major amendment to the HMP is approved (HMP Section E-3).
- Preserve Managers should consult Management and Monitoring Actions (HMP Section F.2 (pp. F-7 to F-29) and the Open Space Management Plan (2004) to ensure the avoidance of impacts due to recreation, unauthorized public access, invasion of non-native species, habitat restoration, monitoring activities, etc.

8.3 Mitigation for Impacts within Standards Areas

Refer to HMP page D-73 for a description of LFMZ-specific mitigation standards.

8.4 Mitigation for Projects with Special Requirements

Special requirements include projects that are adjacent to a Hardline Preserve or Standards Area and projects within the Coastal Zone. General mitigation requirements still apply to all properties; however, more restrictive policies of the Adjacency Standards and Coastal Zone Standards will supersede general requirements if a conflict arises.

8.4.1 Adjacency Standards

Adjacency Standards apply to all projects that occur next to a hardline preserve or an undeveloped portion of a Standards Area that might be conserved in the future. See Section 5.4.1 above and HMP p. F-16 for more details.

8.4.2 Mitigation Measures and Ratios within the Coastal Zone

Table 6 summarizes the mitigation ratio requirements within the Coastal Zone. Table 2 (Section 5.4.2), summarizes additional mitigation requirements for Coastal Zone projects (the HMP pp. D-11 to D-121 should be consulted directly). Highlights of these mitigation requirements include the following:

- Onsite preservation does *not* count towards the mitigation requirements for a given project.

- The "67% offsite mitigation rule" does *not* apply in the Coastal Zone. (The rule states that if at least 67% of natural habitat within the property is preserved, offsite mitigation is not required).
- Gnatcatchers - At least 67% of coastal sage scrub habitat and 75% of all gnatcatchers onsite must be conserved.
- Creation - Mitigation for projects within the Coastal Zone must include a 1:1 creation (or substantial restoration) component.
- No-net-loss - Mitigation should occur within the Coastal Zone to satisfy the no-net-loss of habitat standard.
- Parcel-specific - Refer to coastal zone standards 7-13 and 7-14 for parcel-specific requirements.
- In-lieu mitigation fees may be used to satisfy mitigation requirements for impacts to type D, E, and F habitats in excess of the no-net-loss mitigation requirement (see Section 8.1.1 and Table 5 for more information).
- Habitat buffers - Habitat within a buffer is not eligible for mitigation credit; Upland buffers *will not* be included in the HMP preserve; wetland buffers *will* be included in the preserve but will not be credited towards mitigation. Buffer requirements within the Coastal Zone (HMP p. D-117, no. 7-11):
    - Native upland habitat: 20 feet; upland buffers are measured between the preserve boundary and the outer edge of the project impact area. Fire suppression Zone 3 can overlap with the upland buffer.
    - Riparian habitat: 50 feet
    - Wetland habitat: 100 feet

Table 6. Mitigation Ratios and Standards within the Coastal Zone

Resource/HMP Reference*	Ratio	Additional Mitigation Standards within the Coastal Zone
Wetlands		
Riparian	3:1	No net loss of wetlands
Saltwater, freshwater wetland, or marsh	4:1	No net loss of wetlands
Uplands		
Sensitive upland habitat (general rules that apply to all upland habitat)	Minimum of 1:1 creation	(a) onsite preservation is not eligible for mitigation credit (b) no net loss of habitat for each habitat type (c) when impacts are permitted, mitigation must include at least 1:1 habitat creation or substantial restoration of highly degraded habitat, as approved by the wildlife agencies (d) mitigation should occur within the coastal zone
Coastal sage scrub	2:1 Creation must satisfy one half of obligation	At least 67% of coastal sage scrub and 75% of gnatcatchers onsite must be conserved
Maritime Succulent Scrub Southern Maritime Chaparral	3:1 Creation must satisfy one third of the obligation	No additional habitat-specific mitigation requirements
Southern Mixed Chaparral	1:1 Creation must satisfy the obligation or 1/3 of the total obligation	No additional habitat-specific mitigation requirements
Oak Woodland Native Grassland	3:1 Creation must satisfy the obligation or 1/3 of the total obligation	No additional habitat-specific mitigation requirements

* HMP Section D.7, pp. D-114-120

9.0 Biology Resources Technical Report Format

The BTR will provide the necessary information to establish the current status of biological resources within a project footprint, an analysis of potential project impacts, and mitigation measures that should be implemented to reduce the impacts to below a level of significance. Below is a suggested outline for an adequate BTR. Key items for each section are included under each main heading.

Cover page

Summary of Findings

Introduction

Project location
Project description (describe all components)
Graphics showing
-regional location
-location with respect to HMP boundaries
-project study area with boundaries

Methods and Survey Limitations

Background literature and GIS data search
Field survey methods

Results (quantification of existing conditions)

Vegetation communities descriptions
Inventory of plants and wildlife
Sensitive species –locations and number of individuals
Sensitive habitats –location and acres
Jurisdictional wetlands
Wildlife movement corridors
Graphics showing sensitive resources and project boundary

Evaluation of Project Impacts

Quantify impacts to each vegetation community and jurisdictional resource
Analyze impacts to sensitive species (incl. potentially occurring) and species habitat
Quantify permanent and temporary impacts
Analyze direct and indirect impacts

Evaluate significant and non-significant impacts
Evaluate local and regional significance of the loss of species or habitat
Evaluate impacts to wildlife movement corridors

Mitigation measures

General mitigation measures to avoid or reduce potential impacts
Measures to reduce the significant impacts to below a level of significance
Mitigation requirements for Coastal Zone or Standards Areas
Adjacency standards
In lieu fees
Habitat mitigation
- Required habitat mitigation ratios per HMP
- Ratios for mitigation habitat that is created or restored (as opposed to existing)
- Mitigation habitat (on or off-site) must be determined prior to project approval
- Acreage and potential location of creation/restoration mitigation habitat

Mitigation requirements for jurisdictional resources (wetlands and waters)
Species-specific mitigation requirements
- Listed species
- Narrow endemic species
- Covered species
- Nesting migratory birds or raptors

Mitigation Monitoring Reporting Program
Include supporting documentation

10.0 Permitting

This section discusses the local, State, and Federal permits that may be necessary for a project that impacts biological or jurisdictional resources. Listed below are the regulations that govern the impacts and require the permits, as well the Agency website links where additional information can be found.

Table 7 in Section 10.6 below provides an abbreviated summary of permit types, events that trigger the permit, and the permitting authority. It is important to note that, depending on the biological resources located on the project site and the potential development impacts, more than one of these permits/certifications may be required.

10.1 City of Carlsbad HMP

- The USFWS and CDFG have issued take authority to the City for impacts to covered species. This means that the City can issue an *Incidental Take Permit* for "take" of state or federally listed species covered by the HMP. The City also processes a local *HMP Permit* for projects that directly or indirectly impact natural habitat and/or species (listed or not) that are covered by the HMP.
- "Take" is defined by the federal Endangered Species Act as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Take is defined by the State Endangered Species Act as "hunt, pursue, catch, capture or kill or attempt to hunt, pursue, catch, capture or kill."
- This process replaces the previous requirement for Federal ESA Section 7 consultation, Section 10(a), and Federal Incidental Take Permit with the USFWS for listed species covered by the HMP. The process also replaces the previous requirement for a State Incidental Take Permit from the CDFG for HMP covered species.

10.2 Federal Endangered Species Act (ESA)

- ESA Section 9 prohibits take of federally listed species.
- ESA Section 7 describes a formal consultation process which is required of any federal action (such as permit processing by the U.S. Army Corps of Engineers), for any federal governmental agency, or for projects that receive federal funding

and may potentially impact a federally listed species. The USFWS will analyze the project impacts and prepare a Biological Opinion (BO). From the date that the formal consultation is initiated, the USFWS is allowed 90 days to consult with the agency and applicant (if any) and 45 days to prepare and submit a BO to the permitting federal agency.

- ESA Section 10(a) allows exceptions to Section 9 for non-federal entities (e.g., private landowners or non-federal governmental agencies), through issuance of an Incidental Take Permit. A Habitat Conservation Plan (HCP), along with other documents such as an application form and possibly an Implementing Agreement, must accompany Incidental Take Permit in order to be approved. The applicant is responsible for preparing the HCP. While processing the permit application, USFWS will prepare the incidental take permit, write a BO under Section 7 of the ESA, and finalize the federal environmental review analysis. According to the USFWS website, the target processing time depends on the severity of project impacts on the listed species, ranging from three (3) months to12 months from the time of a complete application acceptance.

10.3 State of California Endangered Species Act (CESA)

- CESA Incidental Take Permit, issued by CDFG, is required for impacts to non-covered state listed species that occur within the City. Some species are designated as Fully Protected Species by the California Fish and Game Code and no provision of any other law can be construed to authorize take of those species. Fully protected species likely to occur within Carlsbad are noted in Table 1, Section 5.3.2 of these guidelines.

10.4 California Fish and Game Code –State Wetlands and Waters

- A Streambed Alteration Agreement (Fish and Game Code Section 1600) is required for any project that may cause changes, diversions, or obstructions to the natural flow of bed, channel, or bank or any river, stream or lake that supports wildlife resources. This permit is issued by the CDFG. The process begins with a notification to the CDFG of planned activities, specifying the anticipated habitat impacts and the type of agreement that may be required. According to the CDFG website, the CDFG has 30 days from the time of notification package submittal to make a completeness determination. If the CDFG determines that an agreement is required, they will submit a draft agreement to the applicant within 60 days of receipt of a complete notification.

10.5 Federal Clean Water Act (CWA)

- CWA Section 404 - Discharge of dredged or fill materials into "wetlands and waters of the U.S." as defined by the U.S. Army Corps of Engineers (ACOE). Activities that require a 404 permit may include placing fill or riprap, grading, mechanized land clearing or dredging, and deposit of dredged or fill material within the Ordinary High Water Mark of waters of the U.S. Lakes, rivers, streams, tributaries and wetlands. Depending on the level of the proposed activity, the project could require either a General Permit (in the form of a Nationwide or Regional Permit) or an Individual Permit. According to the EPA website, General Permits are decided on average 30 days after a receipt of a complete application and decisions on Individual Permits are made within two to six months after application completeness.
- CWA Section 401: Certification by the Regional Water Quality Control Board (RWQCB) that the project will comply with water quality standards. Section 401 of the Clean Water Act (CWA) specifies that any applicant for a federal permit to conduct any activity that may result in any discharge into navigable waters, shall provide the federal permitting agency a certification from the State in which the discharge originates that any such discharge will comply with the Clean Water Act. Succinctly, this means that in California, the Regional Board must certify that the project will comply with water quality standards. According to the RWQCB website, the Regional Board has 30 days following receipt of an application to notify the applicant of its completeness. Once an application is complete, the Board has between 60 days and one year in which to make a decision.

10.6 Summary of Permits and Responsible Agencies

Table 7 below contains a summary of the permits that may be required for impacts to natural habitats and/or sensitive species. This table is intended to be a summary for reference purposes and does not constitute a detailed description of the permit triggers or other pertinent information. The website references are current as of the date of publication of the document and are subject to change by the site hosting agency. It is highly recommended that the individual agencies are consulted prior to determining which permits and procedures would be required for allowing habitat impacts.

Table 7. Summary of Permits that May Be Required for Project Impacts

Permit Type	Permit Trigger	Permitting Agency
Carlsbad HMP Permit	Any project that directly or indirectly impacts natural habitat and/or sensitive species within the City. (See Section 21.210.16 of the Zoning Ordinance at http://www.carlsbadca.gov/chall/ccodes.html)	City of Carlsbad
Carlsbad HMP Incidental Take Permit	Take of a state or federally listed species within the City that is covered by the HMP. (See Section 21.210.16.C of the Zoning Ordinance at http://www.carlsbadca.gov/chall/ccodes.html)	City of Carlsbad
ESA Section 10(a) Incidental Take Permit and Section 7 consultation	Take, by a *non-federal* entity, of a federally listed species that is *not* covered by the HMP. Requires the preparation of a site-specific habitat conservation plan (HCP). (See http://www.fws.gov/Endangered/ pdfs/HCP/HCP_Incidental_Take.pdf)	USFWS
Federal Section 7 consultation and Incidental Take Permit	Take of a federally listed species that is not covered by the HMP by a federal entity or by a project that is federally funded or requires other federal permits (such as a Section 404 permit). (See http://www.fws.gov/ Endangered/ consultations/sec7_faq.html)	USFWS
CESA Incidental Take Permit	Take of state listed species that are not covered by the HMP. Applies to impacts inside and outside of the HMP planning area. (See http://www.dfg.ca.gov/ habcon/cesa/incidental/incid_perm_proced.html)	CDFG
Streambed Alteration Permit Section 1600	Activities that will substantially modify a river, stream or lake. (See http://www.dfg.ca.gov/habcon/1600/qa.html)	CDFG
CWA Section 404 Permit	Discharge of dredged or fill materials into "wetlands and waters of the U.S." as defined by the U.S. Army Corps of Engineers (ACOE). (See http://www.epa.gov/OWOW/ wetlands/regs/sec404.html and http://www.usace.army.mil/cw/cecwo/reg/)	ACOE
CWA Section 401 Certification	A project requires a Section 404 Permit (See http://www.swrcb.ca.gov/cwa401/docs/ questions_answers.pdf	RWQCB

Appendix A

Standard Impact Mitigation Measures

STANDARD IMPACT MITIGATION MEASURES

A. Project Design Guidelines

(Source: MHCP Vol. I, Section 6.2.3, and Agency comments)

1. Design placement of new development in lower quality or disturbed areas. Avoid areas that have the potential to be used as wildlife movement corridors or habitat linkages. The footprint of disturbance (e.g., development, staging areas, access roads, etc.) should be minimized to the maximum extent feasible and be specified in the construction plans.

2. Locate staging areas in disturbed habitat, to the degree feasible.

3. Designate no-fueling zones a minimum distance of 10 meters (33 feet) from all drainages and away from fire-sensitive areas.

4. Encourage greater flexibility in engineering design standards for park roads and maintenance roads through preserve areas. Design these roads to minimize biological impacts while still considering safety standards (e.g., minimize road-bed width, eliminate shoulders on rural roads and maintenance roads, and minimize the number and location of maintenance roads).

5. Avoid landform alteration of major natural features. Configure development to existing topography to minimize grading and land alteration.

6. Require setback limitations from sensitive habitat areas, including a minimum setback outside the root protection zone for all trees to be preserved. Require special construction techniques such as concrete pumping to the site and on-grade construction to protect tree roots.

7. Design placement of new utility corridors to minimize fragmentation and edge effects.

8. Encourage underground utilities and trenchless technology, where possible. Use narrow construction easements, and when possible, use practices such as jacking pipelines under drainages. Include restoration plans and construction monitoring plans for utility corridor construction and repairs which will be approved by the wildlife agencies.

9. Use bridges, instead of culverts, for all major riparian crossings and regional wildlife movement corridors, and use 3-meter chain-link fencing to direct wildlife movement toward the wildlife underpass. The site of the riparian crossing and its

importance as a wildlife corridor should dictate the design. Noise within underpasses should be less than 60 dBA (decibels, A-weighted scale) during the time of day at which the animals use it. Shield corridors from artificial lighting. Use skylight openings within the underpass to allow for vegetative cover within the underpass. Design underpasses or culverts to be at least 30 feet wide by 15 feet high with a maximum 2:1 length-to-width ratio. Avoid co-locating human trails and wildlife movement corridors/crossings.

10. Construct noise barriers for short sections of road that may impact wildlife breeding.

11. Locate traffic controls such as stoplights and stop signs away from sensitive habitat to reduce the concentration of emissions and noise levels.

B. Pre-construction Mitigation Measures

(Sources MHCP Vol I, Sec 6.2.3; MHCP Vol. II, Appendix B, Agency comments)

1. A qualified biologist shall conduct a training session for all project personnel prior to proposed activities. At a minimum, the training shall include a description of the target species of concern and its habitats, the general provisions of the Endangered Species Act (Act) and the HMP, the need to adhere to the provisions of the Act and the HMP, the penalties associated with violating the provisions of the Act, the general measures that are being implemented to conserve the target species of concern as they relate to the project, access routes, and project site boundaries within which the project activities must be accomplished.

2. The footprint of disturbance shall be minimized to the maximum extent feasible and shall be specified in the construction plans. Construction limits will be delineated with orange fencing, which will be maintained until the completion of all construction activities. All employees shall be instructed that their activities, vehicles, equipment, and construction materials are restricted to the proposed project footprint, designated staging areas, and routes of travel.

3. For project areas that contain riparian habitat, the upstream and downstream limits of project disturbance plus lateral limits of disturbance on either side of the stream shall be clearly defined, marked in the field, and reviewed by the project biologist prior to initiation of work. Projects should be designed to avoid the placement of equipment and personnel within the stream channel or on sand and gravel bars, banks, and adjacent upland habitats used by target species of concern.

4. A water pollution and erosion control plan shall be developed that describes sediment and hazardous materials control, dewatering or diversion structures, fueling and equipment management practices, and other factors deemed necessary by reviewing agencies. Erosion control measures shall be monitored on a

regularly scheduled basis, particularly during times of heavy rainfall. Corrective measures will be implemented in the event erosion control strategies are inadequate. Sediment/erosion control measures will be continued at the project site until such time as the revegetation efforts are successful at soil stabilization.

C. Construction Related Mitigation Measures

(Sources: MHCP Vol I, Sec 6.2.3; MHCP Vol. II, Appendix B; HMP p. D-95; Agency comments)

1. The qualified project biologist shall review grading plans (e.g., all access routes and staging areas), and monitor construction activities throughout the duration of the project to ensure that all practicable measures are being employed to avoid incidental disturbance of habitat and any target species of concern outside the project footprint.

2. Construction monitoring reports shall be completed and provided to the City summarizing how the project is in compliance with applicable conditions. The project biologist should be empowered to halt work activity if necessary and to confer with City staff to ensure the proper implementation of species and habitat protection measures.

3. Any habitat destroyed that is not in the identified project footprint shall be disclosed immediately to the City, USFWS, and CDFG and shall be compensated at a minimum ratio of 5:1.

4. Access to and from the site will be located along existing access routes or disturbed areas to the greatest extent possible. All access routes outside of existing roads or construction areas will be clearly marked.

5. Construction employees will limit their activities, vehicles, equipment, and construction materials to the fenced project footprint.

6. Equipment storage, fueling, and staging areas shall be located on disturbed upland sites with minimal risk of direct drainage into riparian areas or other sensitive habitats, and at least 100 ft from Waters of the U.S. These designated areas shall be located in such a manner as to prevent any runoff from entering sensitive habitat. All necessary precautions shall be taken to prevent the release of cement or other toxic substances into surface waters. All project related spills of hazardous materials shall be reported to the City and shall be cleaned up immediately and contaminated soils removed to approved disposal areas.

7. When stream flows must be diverted, the diversions shall be conducted using sandbags or other methods requiring minimal instream impacts. Silt fencing or other sediment trapping materials shall be installed at the downstream end of construction activity to minimize the transport of sediments off-site. Settling ponds where sediment is collected shall be cleaned out in a manner that prevents

the sediment from re-entering the stream. Care shall be exercised when removing silt fences, as feasible, to prevent debris or sediment from returning to the stream.

8. Erodible fill material shall not be deposited into water courses. Brush, loose soils, or other similar debris material shall not be stockpiled within the stream channel or on its banks.

9. The removal of native vegetation shall be avoided and minimized to the maximum extent practicable. Temporary impacts shall be returned to pre-existing contours and revegetated with appropriate native species. All revegetation plans shall be prepared and implemented consistent with MHCP Volume II, Appendix C (Revegetation Guidelines) and shall require written concurrence of the FWS and CDFG.

10. Construction through sensitive areas should be scheduled to minimize potential impacts to biological resources. Construction adjacent to drainages should occur during periods of minimum flow (i.e., summer through the first significant rain of fall) to avoid excessive sedimentation and erosion and to avoid impacts to drainage-dependent species. Construction near riparian areas or other sensitive habitats should also be scheduled to avoid the breeding season (March through September) and potential impacts to breeding bird species.

11. Noise impacts are a concern around areas supporting breeding bird habitat. To avoid or minimize noise impacts, limit construction activities during the breeding season (March through September) to those that will not produce significant noise impacts (i.e., noise levels greater than 60 dB L_{eq} [decibels, equivalent sound level] at the edge of the habitat of concern). Preconstruction surveys at potential impact areas will be conducted from mid-May to mid-June.

12. Lighting in or adjacent to the preserve will not be used, except where essential for roadway, facility use, and safety. If nighttime construction lights are necessary, all lighting adjacent to natural habitat will be shielded and/or directed away from habitat.

13. Fugitive dust will be avoided and minimized through watering and other appropriate measures.

14. If dead or injured listed species are located, initial notification must be made within three working days, in writing, to the USFWS Division of Law Enforcement in Torrance, California and by telephone and in writing to the applicable jurisdiction, Carlsbad Field Office of the FWS, and CDFG.

15. Exotic species that prey upon or displace target species of concern should be permanently removed from the site.

16. To avoid attracting predators of the target species of concern, the project site shall be kept as clean of debris as possible. All food related trash items shall be enclosed in sealed containers and regularly removed from the site(s). Pets of project personnel shall not be allowed on-site where they may come into contact with any listed species.

17. The City of Carlsbad has the right to access and inspect any sites of approved projects including any restoration/enhancement area for compliance with project approval conditions including these BMP. The FWS and CDFG may accompany City representatives on this inspection.

18. All mitigation sites shall be conserved through fee title acquisition or Conservation Easement, as defined in California Civil Code Section 815.1, and proof of recordation shall be provided to the jurisdictional city prior to land disturbance.